

SAFETY DATA SHEET

1. SUBSTANCE AND SOURCE IDENTIFICATION

Product Identifier

SRM Number: 1216

SRM Name: Carbon Modified Silica **Other Means of Identification:** Not applicable.

Recommended Use of This Material and Restrictions of Use

This Standard Reference Material (SRM) is intended for use in the calibration of instruments used in the determination of total elemental carbon. A unit of SRM 1216 consists of three bottles, each containing approximately one gram of chemically modified microparticulate silica.

Company Information

National Institute of Standards and Technology Standard Reference Materials Program 100 Bureau Drive, Stop 2300 Gaithersburg, Maryland 20899-2300

Telephone: 301-975-2200 Emergency Telephone ChemTrec: FAX: 301-948-3730 1-800-424-9300 (North America) E-mail: SRMMSDS@nist.gov +1-703-527-3887 (International)

Website: http://www.nist.gov/srm

2. HAZARDS IDENTIFICATION

Classification

Physical Hazard: Not classified. **Health Hazard:** Not classified.

Label Elements

Symbol: No symbol/pictogram. **Signal Word:** No signal word.

Hazard Statement(s): Not applicable.

Precautionary Statement(s): Not applicable.

Hazards Not Otherwise Classified: Not applicable.

Ingredients(s) with Unknown Acute Toxicity: Not applicable.

3. COMPOSITION AND INFORMATION ON HAZARDOUS INGREDIENTS

Substance: Amorphous silica gel

Other Designations: silica; amorphous silica; microcrystalline; Precipitated silica; colloidal silica.

Hazardous Component(s)

CAS Number
EC Number Nominal Mass Concentration (EINECS)
(%)

Amorphous silica gel 11292-600-8 601-214-2 100

4. FIRST AID MEASURES

Description of First Aid Measures:

Inhalation: If adverse effects occur, remove to uncontaminated area. If not breathing, give artificial respiration or oxygen by qualified personnel. Seek immediate medical attention.

Skin Contact: Wash skin with soap and water.

SRM 1216 Page 1 of 5

Eve Contact: Flush eyes with water for at least 15 minutes. If necessary, seek medical attention.

Ingestion: If adverse effects occur after ingestion, seek medical treatment.

Most Important Symptoms/Effects, Acute and Delayed: Mechanical irritation.

Indication of any immediate medical attention and special treatment needed, if necessary: If any of the above symptoms are present, seek medical attention if needed.

5. FIRE FIGHTING MEASURES

Fire and Explosion Hazards: Negligible fire hazard. Avoid generating dust. See Section 9, "Physical and Chemical Properties" for flammability properties.

Extinguishing Media:

Suitable: Regular dry chemical, carbon dioxide, water, regular foam.

Unsuitable: None listed.

Specific Hazards Arising from the Chemical: None listed.

Special Protective Equipment and Precautions for Fire-Fighters: Avoid inhalation of material or combustion byproducts. Wear full protective clothing and NIOSH approved self-contained breathing apparatus (SCBA).

NFPA Ratings (0 = Minimal; 1 = Slight; 2 = Moderate; 3 = Serious; 4 = Severe)

Health = 1

Fire = 0

Reactivity = 0

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures: Any accumulated material on surfaces should be removed and properly disposed of. Use suitable protective equipment; see Section 8, "Exposure Controls and Personal Protection".

Methods and Materials for Containment and Clean up: Collect spilled material in appropriate container for disposal. Keep out of water supplies and sewers. Keep unnecessary people away, isolate hazard area and deny entry.

7. HANDLING AND STORAGE

Safe Handling Precautions: Minimize dust generation and accumulation on surfaces. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. See Section 8, "Exposure Controls and Personal Protection". Avoid contact with incompatible materials (see Section 10, "Stability and Reactivity").

Storage: Store and handle in accordance with all current regulations and standards.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Limits					
Components	OSHA (PEL)	ACGIH (TLV)	NIOSH (REL)		
Amorphous silica gel	TWA: 80/(%SiO ₂) mg/m ³ TWA: 20 mppcf	No occupational exposure limits established.	TWA: 6 mg/m ³ (respirable dust, as SiO ₂) IDLH: 3000 mg/m ³ (respirable dust, as SiO ₂)		

Engineering Controls: Provide local exhaust or process enclosure ventilation system. Ensure compliance with applicable exposure limits.

Personal Protection: In accordance with OSHA 29 CFR 1910.132, subpart I, wear appropriate Personal Protective Equipment (PPE) to minimize exposure to this material.

Respiratory Protection: If workplace conditions warrant a respirator, a respiratory protection program that meets OSHA 29CFR 1910.134 must be followed. Refer to NIOSH 42 CFR 84 for applicable certified respirators.

Eye/Face Protection: Wear splash resistant safety goggles with a face shield. An eye wash station should be readily available near areas of use.

Skin and Body Protection: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Chemical-resistant gloves should be worn at all times when handling chemicals.

SRM 1216 Page 2 of 5

9. PHYSICAL AND CHEMICAL PROPERTIES

Descriptive Properties:	Amorphous silica gel				
Appearance (physical state, color, etc.)	colorless or white powder				
Molecular Formula	SiO_2				
Molar Mass (g/mol)	60.09				
Odor	odorless				
Odor threshold	not available				
рН	3.5 to 4.4				
Evaporation rate	not available				
Melting point/freezing point	>1600 °C (>2912 °F)				
Specific Gravity (water=1)	2.19 to 2.66				
Vapor Pressure (mmHg)	not available				
Vapor Density (air = 1)	not available				
Viscosity (cP)	not available				
Solubility(ies)	insoluble in water and acids; soluble in hydrofluoric acid, molten alkali when finely divided				
Partition coefficient (n-octanol/water)	not available				
Particle Size	20 μm				
Thermal Stability Properties					
Autoignition Temperature	not available				
Thermal Decomposition	not available				
Initial boiling point and boiling range	2230 °C (4046 °F)				
Explosive Limits, LEL (Volume %)	not available				
Explosive Limits, UEL (Volume %)	not available				
Flash Point	not available				
Flammability (solid, gas)	not available				
10. STABILITY AND REACTIVITY					
Reactivity: Stable at normal temperatures and pr	ressure.				
Stability: X Stable	Unstable				
Possible Hazardous Reactions: None listed.					
Conditions to Avoid: Avoid generating dust.					
Incompatible Materials: Acids, halogens, metal	salts, metals, oxidizing materials, combustible materials.				
Fire/Explosion Information: See Section 5, "Fire Fighting Measures".					
Hazardous Decomposition: Thermal decomposition will produce crystalline silica.					
Hazardous Polymerization: Will Occur X Will Not Occur					
11. TOXICOLOGICAL INFORMATION					
Route of Exposure: X Inhalation	X Skin Ingestion				
Symptoms Related to the Physical, Chemical and Toxicological Characteristics: May aggravate respiratory disorders.					
Potential Health Effects (Acute, Chronic, and Delayed) Inhalation: Irritation, cough phlegm.					
Skin Contact: May cause mechanical irritation.					
Eve Contact: May cause irritation or eye damage.					

SRM 1216 Page 3 of 5

Ingestion: May cause irritation.

Numerical Measures of Toxicity

Acute Toxicity: Not classified.

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Skin Corrosion/Irritation: No data available.

Serious Eye Damage/Eye Irritation: No data available.

Respiratory Sensitization: No data available.

Skin Sensitization: No data available.

Germ Cell Mutagenicity: No data available.

Carcinogenicity: Not classified.

Listed as a Carcinogen/Potential Carcinogen

Yes X No

IARC lists amorphous silica as Group 3, not classifiable as to its carcinogenicity to humans. Amorphous

silica is not listed by NTP or OSHA.

Reproductive Toxicity: No data available.

Specific Target Organ Toxicity, Single Exposure: No data available.

Specific Target Organ Toxicity, Repeated Exposure: No data available.

Aspiration Hazard: Not applicable.

12. ECOLOGICAL INFORMATION

Ecotoxicity Data: No data available.

Persistence and Degradability: No data available. **Bioaccumulative Potential:** No data available.

Mobility in Soil: No data available.

Other Adverse effects: No data available.

13. DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose of waste in accordance with all applicable federal, state, and local regulations.

14. TRANSPORTATION INFORMATION

U.S. DOT and IATA: Not regulated by DOT or IATA.

15. REGULATORY INFORMATION

U.S. Regulations:

CERCLA Sections 102a/103 (40 CFR 302.4): Not regulated.

SARA Title III Section 302 (40 CFR 355.30): Not regulated.

SARA Title III Section 304 (40 CFR 355.40): Not regulated.

SARA Title III Section 313 (40 CFR 372.65): Not regulated.

OSHA Process Safety (29 CFR 1910.119): Not regulated.

SARA Title III Sections 311/312 Hazardous Categories (40 CFR 370.21):

ACUTE HEALTH: No CHRONIC HEALTH: No FIRE: No REACTIVE: No PRESSURE: No

State Regulations: California Proposition 65: Not listed

U.S. TSCA Inventory: Silicon dioxide is listed. Amorphous silica gel is not listed.

TSCA 12(b), Export Notification: Not listed.

Canadian Regulations: WHMIS Information is not provided for this material.

SRM 1216 Page 4 of 5

16. OTHER INFORMATION

Issue Date: 14 May 2015

Sources: ChemADVISOR, Inc., SDS, Amorphous Synthetic Silica Gel, 20 March 2015.

Key of Acronyms:

ACGIH	American Conference of Governmental Industrial	NRC	Nuclear Regulatory Commission
ALI	Hygienists Annual Limit on Intake	NTP	National Toxicology Program
CAS	Chemical Abstracts Service	OSHA	Occupational Safety and Health Administration
CERCLA	Comprehensive Environmental Response,	PEL	Permissible Exposure Limit
	Compensation, and Liability Act		
CFR	Code of Federal Regulations	RCRA	Resource Conservation and Recovery Act
DOT	Department of Transportation	REL	Recommended Exposure Limit
EC50	Effective Concentration, 50 %	RM	Reference Material
EINECS	European Inventory of Existing Commercial Chemical	RQ	Reportable Quantity
	Substances		
EPCRA	Emergency Planning and Community Right-to-Know	RTECS	Registry of Toxic Effects of Chemical Substances
	Act		
IARC	International Agency for Research on Cancer	SARA	Superfund Amendments and Reauthorization Act
IATA	International Air Transportation Agency	SCBA	Self-Contained Breathing Apparatus
IDLH	Immediately Dangerous to Life and Health	SRM	Standard Reference Material
LC50	Lethal Concentration, 50 %	STEL	Short Term Exposure Limit
LD50	Lethal Dose, 50 %	TLV	Threshold Limit Value
LEL	Lower Explosive Limit	TPQ	Threshold Planning Quantity
MSDS	Material Safety Data Sheet	TSCA	Toxic Substances Control Act
NFPA	National Fire Protection Association	TWA	Time Weighted Average
NIOSH	National Institute for Occupational Safety and Health	UEL	Upper Explosive Limit
NIST	National Institute of Standards and Technology	WHMIS	Workplace Hazardous Materials Information System

Disclaimer: Physical and chemical data contained in this SDS are provided only for use in assessing the hazardous nature of the material. The SDS was prepared carefully, using current references; however, NIST does not certify the data in the SDS. The certified values for this material are given in the NIST Certificate of Analysis.

Users of this SRM should ensure that the SDS in their possession is current. This can be accomplished by contacting the SRM Program: telephone (301) 975-2200; fax (301) 948-3730; e-mail srmmsds@nist.gov; or via the Internet at http://www.nist.gov/srm.

SRM 1216 Page 5 of 5